



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,758	04/05/2001	Takahiro Okada	450100-03150	8834
20999	7590	10/05/2004		
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			EXAMINER SHAH, CHIRAG G	
			ART UNIT 2664	PAPER NUMBER

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

18

Office Action Summary	Application No. 09/826,758	Applicant(s) OKADA ET AL.	
	Examiner Chirag G Shah	Art Unit 2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/24/04</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2664

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-5 rejected under 35 U.S.C. 102(a) as being anticipated by Katsumoto (EP 944213).

Referring to claim 1, Katsumoto discloses in figures 1, 4 and in paragraphs 0002 of a reception apparatus for receiving OFDM signal, as a unit for transmission, a transmission symbol including effective symbol generated on dividing the information into respective frequency components in a predetermined range and a guard interval generated on copying the signal waveform of a portion of the effective symbol, comprising:

Fourier transform means for extracting a processing range corresponding to a period of the effective symbol from the transmission symbol and Fourier transforming the extracted processing range to demodulate the information [as disclosed in paragraphs 0012 and 0013, an I/Q demodulator demodulates I/Q components to recover the transmission frame signal, the demodulated I/Q components are subject to a FFT process by an FFT circuit 32; the FFT circuit 32 outputs FFT carrier components of each symbol of S-2 to 76 to a channel decoder 36, which performs frequency deinterleaving, DQPSK

Art Unit: 2664

symbol demapping and FIC/MSK separation and outputs packet data called an FIG to the system controller];

Input means for a user to input the selective inputting information for selecting the OFDM signal to be received [as disclosed in figure 1 and paragraph 0015, user selects a desired program by using a program select key of an operation panel 37];

Storage means for storing the information on the length of the guard interval in association with the selective inputting information input by a user [as disclosed in figure 1 and 4 and in paragraphs 0015-0017, 0040, a memory 41 stores therein broadcast frequency data of a plurality of ensembles]; and

Control means for reading out the information on the guard length responsive to the selective inputting information as input for affording the guard interval length information thus read out to the window control means [as disclosed in figures 1, 4, section 0002-0005 and section 0012-0015, 0035-0042: a controller sets the guard interval lengths of .246 ms; the controller 38 performs a predetermined program selection control and outputs information of designating a sub-channel corresponding to the desired program by referring to FIC information; upon reception of a seek command, the system controller 38 supplies an AFC disable command to the frequency error detector 33 to make the latter output data indicating that the frequency error is zero and to fix the oscillation frequency. The frequency error detector function as the window control means since as disclosed in paragraphs 0012, FFT circuit 32 outputs the carrier-components during the effective symbols period of PRS to a frequency error detector in response to predetermined timing signals. The frequency error detector 33 comprises a

digital signal processor having a decoding software and decodes the carrier components of PRS through inter-carrier differential demodulation and thereafter calculates a correlation function between the decoded carrier-components and a predetermined reference coded; A frequency error of the tuned frequency from the DAB signal is calculated from this correlation function, thus frequency error detector finds the timing of starting FFT processing based on FFT circuit output in order to control the FFT frequency range/window]

Window control means for controlling the processing range, at the time of starting the reception, based on the guard interval length information supplied from the control means [as disclosed in figures 1, 4, section 0002-0005 and section 0012-0015, 0035-0042. A 246ms of each transmission symbol constitutes a guard interval and the remaining period of 1 ms constitutes an effective symbol. Upon reception of a seek command, the system controller 38 supplies an AFC disable command to the frequency error detector 33 to make the latter output data indicating that the frequency error is zero and to fix the oscillation frequency. The frequency error detector function as the window control means since as disclosed in paragraphs 0012, FFT circuit 32 outputs the carrier-components during the effective symbols period of PRS to a frequency error detector in response to predetermined timing signals. The frequency error detector 33 comprises a digital signal processor having a decoding software and decodes the carrier components of PRS through inter-carrier differential demodulation and thereafter calculates a correlation function between the decoded carrier-components and a predetermined reference coded; A frequency error of the tuned frequency from the DAB signal is

Art Unit: 2664

calculated from this correlation function, thus frequency error detector finds the timing of starting FFT processing based on FFT circuit output in order to control the FFT frequency range/window] as claim.

Referring to claim 2, Katsumoto wherein the window control means detects the guard interval length of the OFDM signal being received to store the guard interval length as detected in association with the selective inputting information for specifying the OFDM signal being received [As disclosed in paragraphs 0002-0005, a .246ms of each transmission symbol constitutes a guard interval and the remaining period of 1 ms constitutes an effective symbol. As disclosed in figures 1, 4, section 0002-0005 and section 0012-0015, 0035-0042, upon selective inputting information command, the system controller 38 supplies an AFC disable command to the frequency error detector 33 to make the latter output data indicating that the frequency error is zero and to fix the oscillation frequency. The frequency error detector function as the window control means since as disclosed in paragraphs 0012, FFT circuit 32 outputs the carrier-components during the effective symbols period of PRS to a frequency error detector in response to predetermined timing signals. The frequency error detector 33 comprises a digital signal processor having decoding software and decodes the carrier components of PRS through inter-carrier differential demodulation; the frequency error detector that detects predetermined timing signals that includes guard interval length .246ms, for specifying the OFDM signal of 1ms being received] as claim.

Referring to claim 3, Katsumoto discloses further comprising:

a transmission control information decoding means for decoding the transmission control information from the Fourier-transformed information [as disclosed in 0012; FFT circuit 32

Art Unit: 2664

outputs the carrier-components during the effective symbols period of PRS to a frequency error detector in response to predetermined timing signals. The frequency error detector 33 comprises a digital signal processor having a decoding software and decodes the carrier components of PRS through inter-carrier differential demodulation];

the storage means stores the decoded transmission control information in associated with the selective inputting information [as disclosed in figure 1 and 4 and in paragraphs 0015-0017, 0040, a memory 41 stores therein broadcast frequency data of a plurality of ensembles];

the control means reading out the transmission control information from the storage means responsive to the selective inputting from the user to set a demodulating scheme and/or a decoding scheme from the OFDM signal received based on the read-out transmission control information [as disclosed in figures 1, 4, section 0002-0005 and section 0012-0015, 0035-0042: the controller 38 performs a predetermined program selection control and outputs information of designating a sub-channel corresponding to the desired program by referring to FIC information; upon reception of a seek command, the system controller 38 supplies an AFC disable command to the frequency error detector 33 to make the latter output data indicating that the frequency error is zero and to fix the oscillation frequency. The frequency error detector function as the window control means since as disclosed in paragraphs 0012, FFT circuit 32 outputs the carrier-components during the effective symbols period of PRS to a frequency error detector in response to predetermined timing signals. The frequency error detector 33 comprises a digital signal processor having a decoding software and decodes the carrier components of PRS through inter-carrier differential demodulation and thereafter calculates a correlation function between the decoded carrier-components and a predetermined reference coded; A frequency error of the

Art Unit: 2664

tuned frequency from the DAB signal is calculated from this correlation function, thus frequency error detector finds the timing of starting FFT processing based on FFT circuit output in order to control the FFT frequency range/window] as claim.

Referring to claim 4, Katsumoto discloses a reception apparatus for receiving an OFDM signal comprising:

Fourier transform means for Fourier-transforming the received OFDM signal to demodulate the information [as disclosed in paragraphs 0012 and 0013, an I/Q demodulator demodulates I/Q components to recover the transmission frame signal, the demodulated I/Q components are subject to a FFT process by an FFT circuit 32; the FFT circuit 32 outputs FFT carrier components of each symbol of S-2 to 76 to a channel decoder 36, which performs frequency deinterleaving, DQPSK symbol demapping and FIC/MSK separation and outputs packet data called an FIG to the system controller];

Transmission control information decoding means for decoding the transmission control information from the Fourier transformed signal [as disclosed in 0012; FFT circuit 32 outputs the carrier-components during the effective symbols period of PRS to a frequency error detector in response to predetermined timing signals. The frequency error detector 33 comprises a digital signal processor having a decoding software and decodes the carrier components of PRS through inter-carrier differential demodulation];

Input means for inputting from a user the selective inputting information for selecting the OFDM signal to be received [as disclosed in figure 1 and paragraph 0015, user selects a desired program by using a program select key of an operation panel 37];

Storage means for storing the transmission control information in association with the selective inputting information input by the user [as disclosed in figure 1 and 4 and in paragraphs 0015-0017, 0040, a memory 41 stores therein broadcast frequency data of a plurality of ensembles];; and

Control means for reading out the transmission control information responsive to the selective inputting information as input to set a demodulating scheme and/or decoding scheme for the received OFDM signal based on the read-out transmission control information [as disclosed in figures 1, 4, section 0002-0005 and section 0012-0015, 0035-0042: the controller 38 performs a predetermined program selection control and outputs information of designating a sub-channel corresponding to the desired program by referring to FIC information; upon reception of a seek command, the system controller 38 supplies an AFC disable command to the frequency error detector 33 to make the latter output data indicating that the frequency error is zero and to fix the oscillation frequency. The frequency error detector function as the window control means since as disclosed in paragraphs 0012, FFT circuit 32 outputs the carrier-components during the effective symbols period of PRS to a frequency error detector in response to predetermined timing signals. The frequency error detector 33 comprises a digital signal processor having a decoding software and decodes the carrier components of PRS through inter-carrier differential demodulation and thereafter calculates a correlation function between the decoded carrier-components and a predetermined reference coded; A frequency error of the tuned frequency from the DAB signal is calculated from this correlation function, thus frequency error detector finds the timing of starting FFT

Art Unit: 2664

processing based on FFT circuit output in order to control the FFT frequency range/window].

Referring to claim 5, Katsumoto discloses wherein the control means detects the transmission control information of OFDM signal being received and stores detected transmission control information in the storage means in association with the selective inputting information specifying the OFDM signal being received [as disclosed in paragraphs 0012-0018, when the user selects a desired program, the system controller 38 performs a predetermined program selection control and outputs information of designating a sub-channel corresponding to the desired program, by referring to FIC information. A memory 41 stores therein broadcast frequency data of a plurality of ensembles] as claim.

Conclusion

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703)305-3988, (for formal communications intended for entry)

Or:

(703)305-3988 (for informal or draft communications, please label "Proposed" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Art Unit: 2664

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G Shah whose telephone number is 571-272-3144. The examiner can normally be reached on M-F 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cgs
September 13, 2004


Ajit Patel
Primary Examiner